REMARKS

Claims 1-4 are pending and under consideration in the above-identified application. Claim 5 was previously cancelled.

In the Final Office Action of December 15, 2008, the Examiner rejected claims 1-4.

With this Amendment, claim 1 was amended. No new matter has been introduced as a result of the amendments.

I. 35 U.S.C. § 112 Rejection of Claims

Claims 1-4 were rejected under 35 U.S.C. 112, first paragraph, for failure to comply with the written description requirement. In response, Applicant amended the claims to clarify that an alloy occurs between the outer current collector layer in contact with the outer active material layer and the inner current collector layer in contact with the inner active material layer. Accordingly, the Examiner's rejections are now moot. As such, Applicant respectfully requests that the above rejection be withdrawn.

II. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 1-4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto et al. (EP 0704921 A1) in view of Fukui et al. (WO 02/21616) and Ikeda et al (WO 01/29918). Applicant respectfully traverses this rejection.

The claims require a battery that includes an anode that is made up of an anode current collector having a plurality of layers, including an inner current collector layer and an outer current collector layer. Additionally, the claims require that an outer anode active material layer is disposed on an outer winding surface of the outer current collector layer and an inner anode active material layer is disposed on an inner winding surface of the inner current collector layer. The outer anode active material layer and the inner anode active material layer are alloyed

through heat treatment to the current collector. The alloy between the current collector and the active material creates a stronger adherence than merely coating the material on the current collector.

Additionally, the claims require that the active material layers are made of particles having a primary particle diameter of 0.1 μm to 35 μm. As discussed in the specification, when the particle diameter is below 0.1 μm, an undesirable reaction between the particle surfaces and the electrolyte solution occurs which can decrease capacity. Specification, page 12. Additionally, when the particle size is greater than 35 μm the particles react poorly with lithium, which also decreases capacity. *Id.*

Fujimoto et al. teaches a battery with active material on the current collector. Fujimoto et al., Abstract. Fujimoto et al. also teaches using compounds from groups IIIb, IVb and Vb for the negative active material. Fujimoto et al., page 3, lines 32-36. However, Fujimoto et al. teaches that the active material is coated on the surface of the current collector, rather than alloyed as required by the claims. Fujimoto et al., Abstract. As discussed above, the alloy creates a stronger adherence between the current collector and the active material than merely coating the active material onto the current collector.

Fukui et al. teaches sintering active material particles with conductive metal powder on the surface of a current collector that is conductive metal foil. Fukui et al., Paragraph [0023]. Fukui et al. does not, however, teach or even fairly suggest the particle diameter range of the active particle materials required by the claims. As discussed above, the present specification teaches that the particle diameter range provides the benefit of preventing an undesirable reaction between particle surfaces and the electrolyte solution and poor reaction with lithium, which decrease capacity.

Ikeda et al. teaches a battery that has a thin film on the current collector. Ikeda et al., Abstract. Ikeda et al. also teaches that a current collector can be formed by joining the back faces of two current collectors each having an active material layer on the front face. Ikeda et al., Col. 6, lines 40-45. Applicant respectfully disagrees with the Examiner's statement that Ikeda et al. requires a current collector that is made up of a plurality of layers. Rather, Applicant believes that the single layer current collector is formed by combining two current collectors into one. For example, Ikeda et al. specifically describes the superimposed layers of the thin film as having different characteristics, whereas in the description of the current collector cited by the Examiner, two current collectors are used to form a single current collector. Compare Ikeda et al., Col. 6, lines 40-45 *with* Col. 4, line 65- col. 5, line 6. As such, the current collector required by Ikeda et al. is different from the current collector required by the claims, which has a layered structure.

Additionally, Ikeda et al. fails to teach or even fairly suggest the required particle diameter range required by the claims. As discussed above, the present specification teaches that the particle diameter range provides the benefit of preventing an undesirable reaction between particle surfaces and the electrolyte solution and poor reaction with lithium, which decreases capacity.

As such, the cited references fail either singularly or in combination with each other to teach or even fairly suggest all the requirements of the claims. As such, claims 1- 4 are patentable over the cited references. Accordingly, Applicant respectfully requests that the above rejection be withdrawn.

III. Conclusion

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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